USER Guide

2640 Mini DV Video Cassette Recorder
2656 Full Function Remote Control Panel
2657 Multi Deck Controller
2630 Remote Record/Stop Controller

This manual is provided for information purposes only. All information herein is subject to change without notice. Britannia 2000 is not responsible for any damages, direct or indirect, arising from or related to the use of this manual.

©Britannia 2000 Limited . All rights reserved. Issue 3. Jul 05

Britannia 2000 Ltd
1 Grove Park, White Waltham, Maidenhead, Berkshire, England, SL6 3LW, UK.
Tel: +44 1628 829356 Fax: +44 1628 824316 E-Mail: sales@ britannia2000.co.uk

Table of Contents

Section 1 Introduction

Section 2 Getting Started

Section 3 2640 VCR Controls

Section 4 2656 Full Function Remote Controller

Section 5 2657 Multi Deck Controller

Section 6 2630 Remote Record/Stop Controller

Section 7 Connectors & Signal Pins

Introduction

Congratulations on your purchase of the Britannia 2000, 2640 Mini DV Video Cassette Recorder (VCR) and accessories. The 2640 is designed to record clear, stable pictures from a variety of video sources. The VCR can be used alone or with a 2656 remote Control Panel. If two VCRS are installed, they can be controlled by a 2657 Multi Deck Controller with the option of also having the Remote Controller Panels.
For single deck installations, a 2630 hand held push button remote controller is available.

Features

This section summarises the features of your 2640 and will help you to take advantage of these features.

Digital Recording

Video is recorded digitally on a small video cassette tape. Digital recording will provide the clearest pictures with perfect freeze frame and slow motion playback. Images can be grabbed off tape and printed using standard PC software when replayed on a ground replay unit.

Size

The ***2640*** is designed to fit in to a standard Dzeus rack system (1/2ARINC), which is 146mm wide. The unit takes up only 76mm of rack height, making it one of the smallest VCRs available.

Front Loading

The ***2640*** is a front loading VCR. This means that when it is the rack, access to change the cassettes is from the front. This reduces any clearance required on either side of the unit, making for a more compact console. Internal lighting aids cassette changes at night.

Controls

The ***2640*** is a self contained unit. It has all the control buttons fitted on a front panel. Uniquely, the panel will fold down to enable access to the cassette changing mechanism.

Mounting

The VCR can be mounted vertically or horizontally. When the VCR is vertically mounted, an option is available to enable the front control panel to open at 110° instead of 90°, which allows the panel to remain open whilst the cassette is changed

Multi Deck Operation

The ***2657*** Multi Deck Controller (MDC) enables 2 VCRS to operate together. The user can select the VCRs to operate in sequence to increase the recording time, or in parallel to allow an ‘instant replay’ of an incident to be carried out whilst not affecting the prime recording on the master deck. The MDC takes care of all the video/audio switching and buffering allowing the use of a single video/audio input and output.

Connection with other equipment

The ***2640*** uses standard video connectors and can be interfaced to any standard video source. PAL and NTSC versions are available. 2 audio tracks allow 2 radio channels to recorded simultaneously and replayed individually.

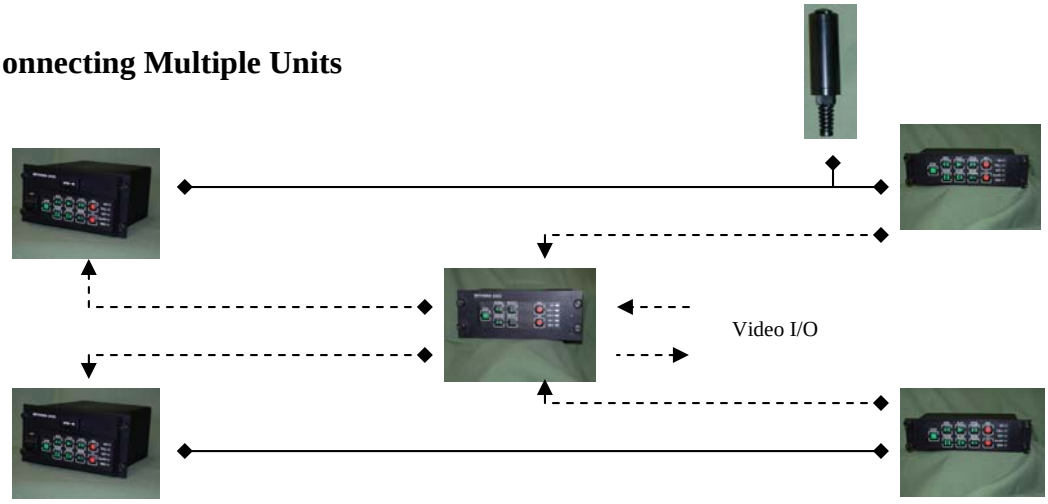
Getting started

This section deals with the equipment as delivered and how to set up the system.

The Equipment

The **2640** is supplied as a complete unit. The standard operating voltage for aircraft is 28vdc. The cables are identical for the 2657 remote controller and the 2656 multi deck controller. They can be fitted in any configuration.

Connecting Multiple Units



Remote Control Panel **2656**

Multi Deck Controller **2657**

Single Push Button Remote **2630**

General

All the equipment is standard aircraft rack mount, 146mm wide (5.25″), 76mm high. Unlike the previous 2604 VCR, there is no need to allow extra room at the top of the VCR to allow the slider catch to operate. The 2640 slider catch is front mounted.

Single VCR Installation

When a single VCR is fitted, the video from the camera system is connected directly to the VCR video IN, and the video cable to the monitor is connected to the video OUT socket on the rear of the unit. The audio input/output is via a 10 pin LEMO connector. Where the 2640 replaces the 2604, a short adapter cable is required from the LEMO to a female Phono (4).

Power is connected via the 5 pin LEMO socket. Separate pins power the backlit display LEDs and the recording deck so that the illumination may be adjusted from the main cockpit lighting rheostat. The backlight voltage input can be either 28vdc or 5vac depending on the version supplied. The normal configuration is 28vdc. Please check prior to installation.

If a remote control unit (RCU) is to be fitted, then a single cable connects the 2640 VCR and the 2656 RCU.

Dual VCR Installation

Dual deck installations are normally controlled via the 2657 multideck controller (MDC). The MDC takes care of remote control routing and video switching so that the installer only has to connect the video from the camera and the video to the monitor.

Connect the video from the camera to the video IN socket at the rear of the MDC, and connect the video to the monitor, to the video OUT socket at the rear of the MDC. No video connections are made to the individual VCRs.

Connect a remote control cables from VCR1 to the VCR1 socket on the rear of the MDC, and another cable from VCR2 to the VCR2 socket on the rear of the MDC. The cables can fit in to the upper or lower socket. (19 way LEMO)

If 2656 remote control units (RCU) are also fitted, then connect additional remote control cables from the 2656 RCU to the unused VCR1 and VCR2 sockets at the rear of the MDC.

Video to and from VCR1 is routed via the MDC according to which mode the operator selects on the MDC and which video output is selected to be displayed on the monitor. The video is routed via the cables.

Note: Cables can be used to connect the MDC to the VCR or 2656 RCU, or to connect the VCR to the RCU. When used to connect the VCR to the RCU, no video is routed to the RCU and only control signals are used. No separate power connection is required.

2640 VCR Controls

Operator Controls

REW
Rewinds tape. When in PLAY mode, acts as reverse search

Fast Forward
Fast forwards tape. When in PLAY mode, acts as forward search

PLAY
Replay

ON Switches VCR power On. Switch UP for ON and the word ON is shown.

OFF Switches VCR power off

Indicators

ON

RECORD MODE FULL selected

END OF TAPE
(less than 1 minutes left)

SLAVE
(When lit indicates that this VCR is the 'Instant Replay' VCR)

DEW indicates moisture on VCR heads

STOP
Stops Record or Play

RECORD
Puts VCR in to record mode. Both buttons need to be pressed at same time. (Factory Option for either button to be pressed to initiate RECORD)

PAUSE
Freeze Frame

SLOW
Slow motion replay

Record Mode Select.
FULL as indicated on the display enables all front buttons.
SLAVE enables RECORD & STOP buttons only

Caution

When inserting the cassette, ensure that it is fully home before pressing down on the top of the cassette holder to load the tape. Only press down on the part of the cassette mechanism marked PUSH. Pressing down on any other part of the mechanism can cause permanent mechanical damage. Do not attempt to close door unless cassette holder is fully retracted.

NOTE

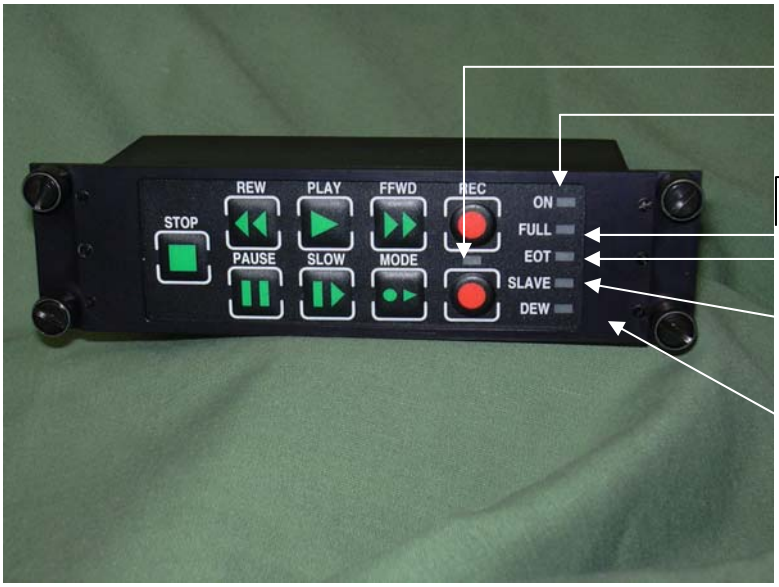
When not in use keep the front flap closed to prevent loose objects been blown in to the mechanism, eg, grass, dust, wool, hair etc, which can cause jamming of the eject system.

2656 Remote Controller

General

The 2656 Remote Control Unit (RCU) can connect directly to a VCR or to the Multi Deck Controller

The functions of the RCU are identical to that of the main VCR front panel, except that there is no ON/OFF



Indicators

RECORDING

ON

FULL, all buttons function

END OF TAPE
(less than 5 minutes left)

SLAVE MODE
(When lit indicates that this VCR is the 'Instant Replay' VCR)

DEW indicates condensation inside the unit. Wait for it to warm up. Do not use when light is on.

2657 Multi Deck Controller (MDC)

General

The Multi Deck Controller (MDC) controls 2 VCRs and routes control signals and video to and from the VCRs.

When 2 VCRs are fitted they can be operated in one of 2 modes.

Mode 1 Normal

In Normal mode the video from the camera is recorded on to both VCRs simultaneously. This allows the 'slave' VCR, which is designated VCR2, to be used for instant replay in the aircraft. The Master VCR (VCR1) will continue to record the camera output even if the operator selects to view the output of the slave VCR (VCR2) on the monitor. When in Normal mode, it is recommended that the Master VCR (VCR1) is put in to the REC MD mode so that the Rewind, Search, Slow FF and REW buttons are inoperative.

Mode 2 Cascade

In this mode the 2 VCRs work in sequence. When the cassette in VCR1 is full, then the video will automatically switch to VRC2 and recording will begin. There is a 1 minute overlap between recordings so that nothing is missed, or the operator has time to insert a new cassette. The EOT (End of Tape) warning indicator will show on the active deck to indicate that the inactive deck should be checked for a cassette.

When the second deck cassette is full, the MDC will check to see if a new tape has been inserted in to VCR1 and start recording on that deck. In this way continuous recording for extended periods can take place. The system checks for a new tape by checking that the eject function was activated on the first deck.

Operational Note

When in Cascade Mode, the MDC automatically switches decks when one is full. If at the end of a flight the power to VCRs is switched off, the next time the power is applied the MDC will initiate recording on to deck 1. If there is a partially recorded tape in deck 2 at the end of the flight, remove it and insert in to deck 1. Do not rewind and the deck will carry on recording the unused portion of the tape.

RECORD
Puts system in to RECORD mode. The MDC built in logic will automatically select which deck is put in to RECORD. Standard software requires both buttons to be pushed simultaneously.

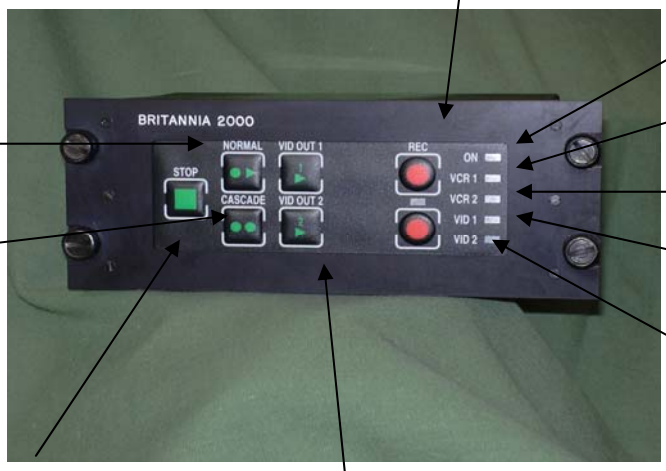
INDICATORS ON
Power to the MDC OK

VCR1
Indicates VCR 1 recording

VCR 2
Indicates VCR2 recording

VID OUT 1
Video from VCR1 displayed on monitor

VID OUT 2
Video from VCR2 displayed on monitor



NORMAL
Selects Normal (Instant Replay) mode

CASCADE
Selects Cascade (Sequential Recording) mode

STOP
Stops the recording

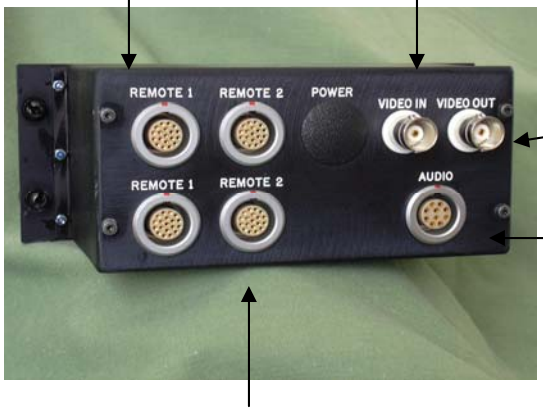
Select either output of VCR1 or VCR2 to be displayed on monitor.
When in normal mode, VCR1 output is the live output from the camera and VCR2 is the output of the 'Instant Replay' VCR

Connect remote cable to VCR1 and Remote Controller 1. Cable can be put in to either connector. Backlit power also supplied via this connector

Video IN
From camera

Video OUT
To monitor

2 Channel audio input/output



Connect remote cable to VCR2 and Remote Controller 2. Cable can be put in to either connector

2630 Remote Record/Stop Controller

The 2630 Remote Controller is a small lightweight remote controller designed to be fixed to a convenient surface near the observer. It can be attached to a camera/TI control panel by Velcro™.

The controller has a single push button, which toggles between RECORD and STOP. The 2640VCR or 2656 remote control units remain fully functional.

The push button is fitted with an internal green LED indicator.
In STOP mode, the LED is extinguished. Press the button once and the 2640 will start to RECORD and the LED will light up to show a steady green. When the VCR generates the End of Tape signal, the LED will start to flash.

To STOP recording, press the button again and the VCR will stop and the LED will extinguish.

Connectors & Signal Pins

2640 VCR Mating Connectors

BNC

BNC Inner Video Signal
BNC Outer Video Ground

	Power	Remote	Audio	Aux
Connector	LEMO FGG2B305CLAD	LEMO FGG2B319CLAD	LEMO FGG2B310CLAD	LEMO FGG1B304CLAD
Pin				
1	28v supply	12vdc*	Audio 1 In	Record LED +
2	28v return	0v*	Audio 1 ret	Record LED -
3	Lamp supply	Video In	Audio 2 In	EOT LED +
4	Lamp supply return	Video return (screen)	Audio 2 return	EOT LED -
5	Spare	Video Out	Audio 1 Out	
6		Video return (screen)	Audio 1 return	
7		Audio 1 In	Audio 2 Out	
8		Audio 1 return	Audio 2 return	
9		Audio 2 In	Spare	
10		Audio 2 return	Spare	
11		Audio 1 Out		
12		Audio 1 return		
13		Audio 2 Out		
14		Audio 2 return		
15		Serial data*		
16		Lamp Supply		
17		Lamp Return		
18		Slave Mode*		
19		Record Mode		

* Indicates signals used for the 2630 Remote Record/Stop controller